

MAQTQGTRRKVCYYYDGDVGNYYYGQGHPMKPHRIRMTHNLLN
YGLYRKMEIYRPHKANAEEMTKYHSDDYIKFLRSIRPDNMSEYSKQMQRFNVGEDCPV
FDGLFEFCQLSTGGSVASAVKLNKQQTDIAVNWAGGLHHAKKSEASGFCYVNDIVLAI
LELLKYHQRVLYIDIDIHHGDGVEEAFYTTDRVMTVSFHKYGEYFPGTGDLRDIGAGK
GKYYAVNYPLRDGIDDESYEAIKPVMSKVMEMFQPSAVVLOCGSDSLSGDRILGCNL
TIKGHAKCVEFVKSFNLPMLMLGGGGYTIRNVARCWTYETAVALDTEIPNELPYNDYF
EYFGPDFKLHISPSNMTNQNTNEYLEKIKQRLFENLRMLPHAPGVQMQAIPEDAIPEE
SGDEDEDPPDKRISICSSDKRIACEEEFSDEEEGEGGRKNSSNFKKAKRVKTEDEKE
KOPPEEKKEVTEEEKTKEEKPEAKGVKEEVKLA (SEQ ID NO:1)

FIGURE 1A

TOP SECRET//COMINT

1 atgtctgggg tctctgccc cgggtgctgc tgtctccac tcggtcatcc tagaacac
61 gcctgagcgt ctctgtcaact cgggtagac cacgcgggaa ggcgagcaag atggcgaga
121 cgcaggcac ccggaggaaa gtctgttaact actacgacgg gatgttggaa zattactatt
181 atggacaagg ccaccaatg aagcctacc gaatccgcat gactcataat ttgctgctca
241 actatggctt ctaccgaaaa atggaaatct atcgcctca caaagccaaat gctgaggaga
301 tgaccaagta ccacagcgat gactacat aattcttgcg ctccatccgt ccagataaca
361 tgcggagta cagcaagcag atgcagagat tcaacgttgg tgaggactgt ccagtattcg
421 atggcctgtt tgagttctgt cagttgtca atcgctgtga attgggctgg gggctgcac catgaaaga
481 ttaataagca gcagacggac atctggcttc tggtacgtca atgatatcgat tttggccatc ctgaaactgc
541 agtccgagggc atctggcttc tggtacattg acattgtat tcacatggg gacggcggt
601 taaagtatca ccagagggtg ctgtacattg tgactgttc ctttcataag tatggagagt
661 aagaggcctt ctacaccacg gaccgggtca tgactgttc caaaggcaag tattatgc
721 acttcccagg aactggggac ctacgggata cggtggatc tgaggccatt ttcaagccgg
781 ttaactaccc gctccgagac gggattgtat acgatccata tgaggccatt ttcaagccgg
841 tcatgtccaa agtaatgggg atgttccacg ctatgtcggt ggttttacag tgcggctcag
901 actccctatc tggggatcgg ttaggttgc tcaatctaact tataaaggca cacgccaagt
961 gtgtggatt tgcagaagacg cttAACCTGC ctatgtcgat gctggggcc ggtgggtaca
1021 ccattcgtaa cggtggccgg tgctggacat atgagacagc tggtggccctg gatacgggaga
1081 tccctaataatgacttccatatac aatgactact ttgaaatactt tgaccaggat ttcaagctcc
1141 aatcagtcc ttccataatgacttccatatac aatgactact ttgaaatactt tgaccaggat ttcaagctcc
1201 agcgactgtt tgagaacctt agaatgtgc cgcacgcacc tggtggccctg gatacgggaga
1261 ttccctgagga cgccatccccctt gacaaacgaa ttgcctgtga ggaagatcc tccgattctg
1321 gcatctcgat ctgcctctt gacaaacgaa ttgcctgtga ggaagatcc tccgattctg
1381 aagaggaggg agagggggggc cgcaagaact ctccaaactt caaaazagcc aagagagtca
1441 aaacagagga tggaaaagaa aaagacccag aggagaagaa agaagtcacc gaaaggagggaga
1501 aaaccaagga ggagaagcca gaagccaaag gggtcaagga ggaggccaaat tgcggccctgaa
1561 tggaccccttc cagctctggc ttccctgtga ctccctcagc ttcccttc c (SEQ ID NO:2)

FIGURE 1B

MAYSQGGGKKVCYYYDGDIGNYYYYGQGHPMKPHRIRMTHNLLL
NYGLYRKMEIYRPHKATAEEMTKYHSDEYIKFLRSIRPDNMSEYSKQMHIIFNVGEDCP
AFDGLFEFCQLSTGGSVAGAVKLNRQQTDMAVNWAGGLHHAKKYEASGF CYVN DIVLA
ILELLKYHQRVLYIDIDIHHGDGVEEAFTDRVMTVSFKYGEYFPGTGDLRDIGAG
KGKYYAVNFPMCDGIDDESYGQIFKPIISKVMEMYQPSAVVLOCGADSLSGDRLGCFN
LTVKGHAKCVEVVKTFLPLLMLGGGYTIRNVARCWTYETAVALDCEIPNELPYNDY
FEYFGPDFKLHISPSNMTNQNTPEYMEKIKQRLFENLRMLPHAPGVQMQAIPEDAVHE
DSGDEDGEDPDKRISIRASDKRIACDEEFSDEDEGGRRNVAHKKGAKKARIEED
KKETEDKKTDVKEEDKSKDNGEKTDTKGTKSEQLSNP (SEQ ID NO:3)

FIGURE 2A

SEQUENCE DATA

1 cgccgagctt tcggcacctc tgccgggtgg taccgagctt tcccggcgcc ccctcccttc
 61 ctccccacccg cctgccttc cccgcggac tatcgcccc acgtttccct cagccctttt
 121 ctctcccgcc cgagccgccc cggcagcgc agcagcagca gcaggcaggag gaggagcccg
 181 gtggcggccg tggccggggaa gcccattggcg tacagtcaag gaggcggcaa aaaaaaagtcc
 241 tgctactact acgacgggtga tattggaaat tattttatg gacaggggtca tcccatgaag
 301 cctcatagaa tccgcattgc ccataacttg ctgttaattt atggctataa cagaaaaatg
 361 gaaatataataa ggcccataa agccactgcc gaagaaatgata aataagacca gatacatgt
 421 tataatccaat ttctacggtc aataagacca gatacatgt gacgggttca tccatgt
 481 catatatta atgtggaga agattgttca gctgttgcgt tgtaatgttata cagaatata
 541 ctctcaactg gcgggttcaat tgctggatg attacatcatgt gctgttgcgt gtttgcgt
 601 gctgttaattt gggctggagg tgccatctt gataagaaat acgaagcatc aggattctgt
 661 tacgttaatg atattgtgt tgccatctt gattactaa agtacatca gagatctt
 721 tatattgata tagatattca tcatgggtat ggtgttgaag aagcttttata cacazcagat
 781 cgtgtatgtt cggatattca ccataatataa ggggaataact ttctggcac aggagacttg
 841 agggatattt gtgttgttgcgtt gcatgttgcgtt aaggcttata tctaaagggt gatggagatg
 901 atagatgtatg agtcatatgg gcatgttgcgtt attacatgtt ggtgttgcgtt aatccat
 961 tatcaaccta gtgttgttgcgtt attacatgtt ggtgttgcgtt cattatctgg tgatagactg
 1021 gtttgttca atctaacatgtt caaaaggatcat gctaaatgtt tagaagtgtt aaaaactttt
 1081 aacttaccat tactgtatgtt tgaggaggatg ggttgcgtt aatccatgtt tgctcgatgt
 1141 tggacatgtt agactgttgcgtt tgccctgtt accagacttc aaactgtcata tttagtcttc
 1201 gattactttt agtatccatgg tatggaaaatg ataaaacatgtt gtttgttgcgtt aatccatgtt
 1261 aaccagaaca ctcagaata tatggaaaatg ataaaacatgtt gtttgttgcgtt aatccatgtt
 1321 atgttacccatgtt atgcacccatgg tgtccatgtt gtttgttgcgtt aatccatgtt
 1381 gacagtggatg atgaagatgtt agaagatccatgtt gtttgttgcgtt aatccatgtt
 1441 aagcgatgtt ctgtgtatgtt agaatttca gattctgtt gtttgttgcgtt aatccatgtt
 1501 agaaatgtgg ctgtatccatgtt gaaaggagatgtt aagaaaggatgtt gtttgttgcgtt
 1561 gaaacagagg aaaaaaaaaac agacgttacatgtt gaaaggatgtt aatccatgtt
 1621 gaaaaaacatgtt ataccaaaatgtt aaccaatca gaaacatgtt gaaaggatgtt aatccatgtt
 1681 tctcaccatgtt ttcagaaaaatgtt cattaaaaatgtt aatccatgtt gtttgttgcgtt
 1741 gaagacttgcgtt ggttgttgcgtt tataacttctt gtttgttgcgtt aatccatgtt
 1801 actttttcgatgtt ttttgttgcgtt ctggccatgtt gtttgttgcgtt aatccatgtt
 1861 aaatttccatgtt ttcaccatgtt gtttgttgcgtt atagatgtt aatccatgtt
 1921 gtcaaaaaaa ctgtatccatgtt aaagaagatgtt ttttgttgcgtt aatccatgtt
 1991 aaaaatgtt (SEQ ID NO:4)

FIGURE 2B

MAKTVAYFYDPDVGNFHYGAGHPMKPHRLALTHSLVLHYGLYKK
MIVFKPYQASQHDMCRFHSEDYIDFLQRVSPTNMQGFTKSLNAFNVGDDCPVFPGLFE
FCSRYTGASLQGATQLNNKICDIAINWAGGLHHAKKFEASGF CYVN DIVIGILELLKY
HPRVLYIDIDIHHGDGVQEAFYLTD RVMTVSFHKYGNYFFPGTGD MYEVGAESGRYYC
LN VPLRDGIDDQS YKHLF QPVINQVVDFYQPTCIVLQCGA D SLGC DRLGC FNLSIRGH
GECVEYVKS FNI PLLVLGGGGYTVRNVAR CWTYET SLLVEE AISEEL PYSEYF EYFAP
DFTLHPDVSTRIENQNSRQYLDQIRQTIFENLKMLN HAPS VQIHDV PADLLTYDRTDE
ADAEEERGPEENYSRPEAPNEFYDGDHDNDKESDVEI (SEQ ID NO:5)

FIGURE 3A

1 ggaattcgcg gccgcggcgg gcgcgggagg tgccccct gctccgcgc gacccatggc
 61 caagaccgtg gcctatttct acgacccca cgtggcaac ttccactacg gagctggaca
 121 ccctatgaag ccccatcgcc tggcattgac ccatagcctg gtccctgcatt acggttctta
 181 taagaagatg atcgcttca agccatacca ggcctccaa ctgcacatgt gcccgttcca
 241 ctccgaggac tacattgact tcctgcaggg agtcagcccc accaatatgc aaggcttcac
 301 caagagtctt aatgccttca acgtaggcga tgactgcccgttcccg gyctcttga
 361 gttctgctcg cggtacacag ggcacatctt gcaaggagca acccagctga acaacaagat
 421 ctgtgataat gccattatctt gggctgggg tctgcaccat gccaagaagt ttgaggcctc
 481 tggcttctgc tatgtcaacg acattgtgtat tggcatcctg gagctgctca agtaccaccc
 541 tcgggtgttc tacattgaca ttgacatcca ccatggtgac ggggttcaag aagcttctta
 601 cctcaactgac cgggtcatga cgggtcttccatccaaatcc gaaaattact tcttccctgg
 661 cacaggtgac atgtatgaag tcggggcaga gagttggcgc tactactgtc tgaacgtgcc
 721 ctgcgggat ggcattgtat accagagttt caagcacctt ttccagccgg ttataaacc
 781 ggttgtggac ttctaccaac ccacgtgtcat tggtgtccag tggtggactg actctctgg
 841 ctgtgatcgat ttgggtctgtt ttaacactcg catccggggg catggggaaat gctgtgaata
 901 tgtcaagac tcaatattcc ctctactcgat gctgggtggt ggtgggtata ctgtccgaaa
 961 tggggcccg tgcgtggacat atgagacatc gctgtggta gaagaggcca tttagtgagga
 1021 gttcccttat agtataact tgcgtactt tgccccagac ttcacacatc arccagatgt
 1081 cagcaccgcg atcgagaatc agaactcaacg ccagtatctg gaccagatcc gccagacaat
 1141 ctttgaaaaac ctgaagatgc tgaaccatgc acctagtgtc cagattcatg acgtgcctgc
 1201 agacctcttgc acctatgaca ggactgtatca ggctgtatca gaggaggggg gtcctgg
 1261 gaactatagc agggcagagg caccatgc ttctatgtat gggatgtcg tggcccaagg zatttcttt
 1321 ggaaagcgat gtggagatrtt aagagtggctt tggatgtcg tggccctgggg zgtcacc
 1381 cacctttgg aagggttggg gggaaaaggaa gtggcttcta gaggcccttgc gatccatca
 1441 ggggttttg ctgactctgg gaaagatgtt ggagaccaca ttgggttctc gaaccatcta
 1501 cctgttttc ctctctctcc caaggactga caatggtacc tattaggat gagatacaga
 1561 caaggatagc tatctgggac attatggca gtggccctg gaggcagtcc ctggcccccc
 1621 ttggccctta ttcttccctt gttccctcg aaccctggggg atggacgggt
 1681 agacaaggac tgatgtggc tctgacttcc ttcttccctg gggttctgacc ttcttccctcc
 1741 cctgttttc agggaaatgtt aagagagaga gatggggaaatggctgtggc tccctaaacac
 1801 ctgaatccca gatgtggggatgtt caatgggggg gggatataaa aatgttctg
 1861 ttctcaactt tggcttcatg tccatttac cactatggggatggccatcaataaa ctaatgtgg
 1921 atttttgtatggccatcaataaa ctaatgtgg (SEG ID NO:6)

FIGURE 3B

D
O
G
N
P
W
-
D
W
P
D

MLAMKHOQELLEHQRKLERHQEQELEKQHREQKLQQLKNKEKG
KESAVASTEVKMKLQEFVLNKKALAHRNLNHCISSEPRYWGKTQHSSLQSSPPQS
GVSTSYNHPVLMGYDAKDDFLRKTAEPNLKLRSLKQKVAERRSSPLLRKDGPPV
TALKKRPLDVTDACSSAPGSGPSSPNNSGSVSAENGIAPAVPSIPAETSLAHLVA
REGSAAPLPLYTSPSLPNITLGLPATGPSAGTAGQODTERLTLPALQQLSLEPGTHL
TPYLSTSPLERDGAAHSPLLQHMVLEOPPAQPLVTGLGALPLHAQSLVGADRVSP
SIHKLRQHRPLGRTQSAPLPQNAQALQHLVIQQQHQOFLEKHKKQOFQQQQLQMNKIIP
KPSEPARQPESHPEETEEELREHQALLDEPYLDRLPGQKEAHQAQGVQVKQEPIESDE
EEAEPPREVEPGQRQPSEQELLFRQQALLLEQQRIHQRLRNYQASMEAAGIPVSFGGHR
PLSRAQSSPASATFPVSVQEPPTKPRFTGLVYDTLMLKHQCTCGSSSSHPFHAGRIQ
SIWSRLQETGLRGKCECIRGRKATLEELQTVHSEAHTLLYGTNPLNRQKLDKLLGS
LASVFVRLPCGGVGVDSDTIWNEVHSAGAARLAVGCVELVFKVATGELQNGFAVVRP
PGHHAEESTPMGFCYFNSVAVAAKLLQQLSVSKILIVDWDVHHGNGTQQAFYSDPSV
LYMSLHRYDDGNFFPGSGAPDEVGTGPGVGFVNMAFTGGLDPPMGDAEYLAAFRTVV
MPIASEFAPDVVLVSSGFDAVEGHPTPLGGYNLSARCFGYLTKQLMGLAGGRIVLALE
GGHDLTAICDASEACVSALLGNELDPLPEKVLQQRPNANAVRSMEKVMEIHSKYWRCL
QRTTSTAGRSLIEAQTCENEAAETVTAMASLSVGVKPAEKRPDEEPMEEPPPL (SEQ ID NO: 7)

FIGURE 4A

1 ggagggttgtg gggccgcgcg cgcggagcac cgtccccgcc ggcgcccga cccgacccca
61 agccccgcga cccgcgcgcg ccgcgcgcg tcggccggct acagcctccc agccctcgcc
121 cccggcgccg cggtggccgc gtccggctg tcggccggcc agcccgagcc cggcgcgcgg
181 cgggtggcg cgcaggctga ggagatgcgg cggagacgc ccggccggc cggagcgggg cttagagccgg
241 ccgcgcgcgc cggccgcgt cagctgcag gccttggcgc cccggccggc cccggccggc tggacgcgc
301 cggccgcggcc ggcgcgcgc cggccgcgt ggaggccggg gccaaggctg gccgcgcgc
361 cggccacac cggccgcgc cggccgcgt gacccattca cccgcgcgc
421 gttggaccgc cggccgcgc gggccgcgg gcccatttcg cacggcaggc agcggcgcc
481 gagggcgctt cggccgcgc gggggggcgg cgggggtggg cacggcatttc tgccagaagcc agcggacgc
541 tctcccggtt cggccgcgc gccccccgag caggcttcat gagacccatc cggcgaggct cggcgcttga
601 tctgttcaac ttgtgggtta cctggctcat tacccatc tgccagaatc tgccgggggg agtttgzgc
661 acgtctgtga cccagccctc accgtccccg gggaaattt tgaccatc cggcgaggct cggcgcttga
721 tcgtggagc tatgtttcc gggaaatcc cccaggccat ccagatggac tttctggccg agaccagcca
781 attgtcttag caatgagctc cccaggccat ccagatggac cccatgccc gcacgggtga tgccggccac
841 gtggagctgc tgaatccctgc cccggccatgg gggggccatgg acctgcgcct ggaccaccag
901 ggcgtgcctc tgcaagtggc cccctggca gtggccatgg agtgcagca ggagctctg
961 ttctcaactc ctgtggcaga gggccgcgc gatccagagg cagatccatc tgccgtgatc ccagaggcag
1021 ggcgtcaagc agaagcaga gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1081 cacgagcaga tctccggca cccatggca gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1141 gagatgtcg cccatggca gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1201 caccggccagg agcaggagct gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1261 aacaaggaga aaaaaggccaa gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1321 gaattttgc tcaataaaaaa gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1381 agcgcacccctc gctactggta cccctataac cccctggcc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1441 ccccgagcgg gggccgcgc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1501 gatgacttcc ctcttaggaa aacggccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1561 zaggcagaag tggccgaaag gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1621 gtcactgtcc taaaazagcg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1681 ggctccggac ccagctccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1741 ggcggcccg tccccccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1801 gaaggctcgg ccgtccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1861 ggcctgcctg ccacggccccc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1921 acccttcccg cccctccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
1981 ctgagcacct gggccgcgc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2041 atggcttccatc tggagcagcc accggccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2101 cccctccatc cccatggcc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2161 cggcagcacc gcccactggg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2221 ctgcagcacc tggcatccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2281 ttccagcagc agcaactgc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2341 cagccggaga gcccacccgg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2401 gacgagccct acctggaccg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2461 caggtgaagc aggagccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2521 gagccggggcc agggccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2581 ctggzgcagc agggccatc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2641 atccccgtgt cccatggcc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2701 gcccacccatc cccatggcc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2761 gtgtatgaca cccatggcc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2821 gagcacgcgg gggccgcgc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2881 zaatgtcgat gggccgcgc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
2941 gaagccacaca cccatggcc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3001 aaactcttag gggccgcgc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3061 gacagtgcaca cccatggcc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3121 tggccggcccg tggccggcccg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3181 tggccggcccg tggccggcccg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3241 tccgtggcccg tggccggcccg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3301 gtggactggg acgtgcacca tggccggcccg gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3361 gtccctgtaca tggccggcccg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3421 cctgtatggg tggccggcccg gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3481 ggcctggacc cccatggcc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag
3541 ccgatcgcca gggccgcgc gggccgcgc gggccgcgc gggccgcgc gacatccatc tgccgtgatc ccagaggcag

FIGURE 4B (SHEET 1 OF 3)

3601 gagggccacc ccacccctct tgggggctac aaccctccg ccagatgtct cgggttaccc
3661 acgaagcgc tgatggcc ggctggccg cggatgtccc tggccctcg gggaggccac
3721 gacctgacc ccattgcga cgccctggaa gcatgtttt ctgccttgc gggaaacgag
3781 cttgtatccccc tccccaaaaa gtttttacag caaagacca atgcacccgc tgccttc
3841 atggaaaatg tcatggat ccacagcaag tactggcgct gcctgcagcg cacaacctcc
3901 acagcccccc gttctgtat cgaggctcg acttgcgaga acgaagaagc cgagacggc
3961 accgcctatgg cctcgctgtc cgtggggctg aagcccgccg aaaagagacc agatgaggag
4021 cccatggaa aggagccgccc cctgttagcc tccctcgaaag ctgtctgttcc ttgtctgtc
4081 tgtctctgtc ttgaatgtca gccaagaaac ttccctgtgt caccgcctgccc tccaccgtg
4141 gggctcttgg gtagccacca gggacacca gctgtcaaca gccacgggaa gccttctgc
4201 cgccccaggcc cacaggctc gagacgcaca tgcacgcctg ggcgtggcas cttcacagggg
4261 aacacgggac agacgggac gccgtggaaag aaaggagccct gtcggaaac gcccggagc
4321 tggcggtcc cgcaaggggac agttgacacg aggcacagaa aacaataatc aaagatctaa tataaaaa
4381 tgccgaatc agttgtatgg tttttaaatgtt tattaccac aactccacag tctctgtgt
4441 caaacttgtat taaaacttggt gcttaaagtt tttttttttttt tttttttttt tttttttttt
4501 aaccactcga ctatcttgc agtttattttt tttttttttttt tttttttttt tttttttttt
4561 gggccgcctc tgtgtaccat agcgggtgtc egcgggggggtt ctgcaccccg gtgggggaca
4621 gagggaccctt taaagaaaaac aaaactggac agaaacagga atgtgagctc gggagctgg
4681 cttgagtttcc taaaagccca tcggaaatgt cgagggtgt cttttttttt tttttttttt
4741 gtggattttt gtggctgggt tttctgtatgtt ctggaaaca atgccttaag aaaaaacaaa
4801 cagcaggaat cggggggaca gttttctgtg gccagccgag cctggcagtgc ctggcaccgc
4861 gagctggcc gacgcctcaa gcacgggcac cagccgtcat ctccggggcc aggggtgtca
4921 gcccgggggtt ccctgttttgc ttatgtgt gtttaagaaa aatggaggtt gttccaaaaa
4981 agtggcaaat cccgttggag gttttttttttt gttttttttttt tttttttttttt tttttttttt
5041 ctcacacgc acataggccat tttttttttttt tttttttttttt tttttttttttt tttttttttt
5101 ttgcagtgtt acgatcgaa tttttttttttt tttttttttttt tttttttttttt tttttttttt
5161 atttttagta taaaataataa tttttttttttt tttttttttttt tttttttttttt tttttttttt
5221 gaaacttact tgattcttat tttttttttttt tttttttttttt tttttttttttt tttttttttt
5281 gtatatatat atatataaaa tttttttttttt tttttttttttt tttttttttttt tttttttttt
5341 tgaatttgc ctcaagggtgc tttttttttttt tttttttttttt tttttttttttt tttttttttt
5401 tcaagctcca gattggcttag tttttttttttt tttttttttttt tttttttttttt tttttttttt
5461 tacaagtttgc tacccattttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
5521 tcatgcacat atgtacccaa tttttttttttt tttttttttttt tttttttttttt tttttttttt
5581 ttgtatgaat tttttccaaat tttttttttttt tttttttttttt tttttttttttt tttttttttt
5641 tccctccacca tttagccattttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
5701 attttcggtt gtacattttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
5761 ttgtacat gatgtttttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
5821 agtgagagga gggaccgttag tttttttttttt tttttttttttt tttttttttttt tttttttttt
5881 ctgtccctagg agctgtataa tttttttttttt tttttttttttt tttttttttttt tttttttttt
5941 attacgagggtt gtgggtgttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
6001 gcccggccac ccttggggaggcc tttttttttttt tttttttttttt tttttttttttt tttttttttt
6061 gtttaaactt ctctgaccac tttttttttttt tttttttttttt tttttttttttt tttttttttt
6121 ttttgagcat gttagccat tttttttttttt tttttttttttt tttttttttttt tttttttttt
6181 ccactgcgcg cactgtggccaa tttttttttttt tttttttttttt tttttttttttt tttttttttt
6241 acccttgcgtt cctgtgtgaac tttttttttttt tttttttttttt tttttttttttt tttttttttt
6301 ttactctttt ttctcttccaa tttttttttttt tttttttttttt tttttttttttt tttttttttt
6361 agcacatgaa gcaccagggtt tttttttttttt tttttttttttt tttttttttttt tttttttttt
6421 agttcagaca caccgtgtcc tttttttttttt tttttttttttt tttttttttttt tttttttttt
6481 tacagggttag ctctgtatggaaat tttttttttttt tttttttttttt tttttttttttt tttttttttt
6541 tcacttgcgtc actggggctgc tttttttttttt tttttttttttt tttttttttttt tttttttttt
6601 zcggtttttgg gacttgcgtt tttttttttttt tttttttttttt tttttttttttt tttttttttt
6661 zqattggccaa gaggaggctgg tttttttttttt tttttttttttt tttttttttttt tttttttttt
6721 gctagcaggc tttttttttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
6781 ccacccgtcc tttttttttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
6841 ttttaagccat atgtgggtat tttttttttttt tttttttttttt tttttttttttt tttttttttt
6901 ttaatrtctaa ttcttccaa tttttttttttt tttttttttttt tttttttttttt tttttttttt
6961 gtttcatctg tcaatgttccact tttttttttttt tttttttttttt tttttttttttt tttttttttt
7021 ttcttgcgtt gacccactcg tttttttttttt tttttttttttt tttttttttttt tttttttttt
7081 atctgcgtcc gctgtgtcc tttttttttttt tttttttttttt tttttttttttt tttttttttt
7141 tttttttttttt tttttttttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt
7201 gggagtcage aagcgagccat tttttttttttt tttttttttttt tttttttttttt tttttttttt
7261 cctcttggcc tttttttttttt tttttttttttt tttttttttttt tttttttttttt tttttttttt

FIGURE 4B (SHEET 2 OF 3)

7321 cacgccccac cagcaggcg 9tgcgggaa ggccgtggcc cgctggac: ggccggccct
 7381 ccccagcgtc ccaggctct gttctggag ggccacttg tcaagggtg tcagttttc
 7441 ttacttctt tgaaaatct gtttgcagg ggaaggacca ttctgtatg gtctgacaca
 7501 aaagcaagg tggatccctt cttaactggt cacagccacg tgctcatcc atctttctt ttgttagctt
 7561 aacattccctt gttttatgg gcatgtatac atatataaat atatagatat zaatataat
 7621 tggggccacg ttttaatgtt cttacacctg gaggttgcgt ggactgtacg accggcatga
 7681 gaatataatc tttaatgtt ttgcacgcca aactcgacg ctgggggaa gaagaaaaat
 7741 cttaatactg tacacagatt tgacatttcg agataaaaaa gatggaaatt ttctgtaaa
 7801 gccttcgtt tccctctca agggcggggaa agtttgcgtc ttattgaact tattcttaag
 7861 aaaaaaccc tggagggagg agaaaaataa aaagactac tcaaacattt gtcatattaa
 7921 aaattgtact ttattatgtt ctgtgacat accaataata gagtttattt tattatgt
 7981 gaaaaaaaaat ttatcttagca ctactcgaaa ttccacagtga actgcctgtc tcttcgagt
 8041 gaaacagtgt tttagggaaa ttgttttgtt ttgtttgtt ctttttatc ctttccacgg
 8101 tgatttggag gaattttgtt cctcaactggc ttgtgacgg ttcatctgtt tgagaactg
 8161 gccaggcgag cgccgcccgc ctttccca cagctgtgtt gacttttaa ttacttttag
 8221 ggccggactcg aaagagttttt cactttaagc agtctgtgaac tttgtcgagca ctgtgggtta
 8281 gtgatgtatg gctaagatcc ttgtcatcgaa agggaaaccat ttcttcattt taacgzaagctt
 8341 caattatact ttgtcatcgaa ctctggcatt gataaaaat ctgtatctt aagaaaaat
 8401 ttagctcggtt ctcaacttgt

(SEQ ID NO: 8)

FIGURE 4B (SHEET 3 OF 3)

DRAFT - DRAFT

LRQGGTLTGKFMSTSSIPGCLLGVALEGDGSPHHASLLQHVLL
LEQARQOSTLIAVPLHGQSPLVTGERVATSMRTVGKLPRHRPLSRTQSSPLPQSPQAL
QQLVMQQQHQQFLEKQKQQQLQLGKILTKTGTGELPROPTTHPEETEEELTEQQEVLLGE
GALTMPREGSTESESTQEDLEEEDEEEDGEEEEDCIQVKDEEGESGAEEGPDLLEPGA
GYKKLFSDAQPLQPLQVYQAPLSLATVPHQALGRTQSSPAAPGGMKSPPDQPVKHLFT
TGVVYDTFMLKHOCMCGNTHVHPEHAGRIQSIWSRLQETGLLSKERICRGRKATLDEI
QTvhSEYHTLLYGTSPNQRQKLD SKLLGPISQKMYAVLPCGGIGVDSDTVNNEMHSS
SAVRMAVGCLLELAFKVAAGELKNGFAIIRP?GHAEESTAMGFCFFNSVAITAKLLO
OKLNVGKVLIWDWDIHNGNTQQAFYNDPSVLYISLHRYDNGNFFPGSGAPEEVGGGP
GVGYNVNVAWTGGVDPPIGDVEYLTA?RTVVMPIAH?FSPDVVLVSAGFDAVEGHLSP
LGGYSVTARCFGHLTRQMLTAGGRVVALEGGHDLTAICDASEACVSALLSVELQPL
DEAVLQQKPNINAVATLEKVIETIOSKHWSCVQKFAAGLGRSLF?AQAGETEEASTVSA
MALLSVGAEQAAQAAAAREHSPRPAAEPMEQEPAL (SEQ ID: No: 9)

FIGURE 5A

卷之三

1 ccctgcggca gggggcactg ctgaccggca agttcatgag cacatccctt attcctggct
61 gcctgctggg cgtggcactg gagggggcactg ggagccccca cgggcattgcc cccctgtgc
121 agcatgtgct gttgtggag caggcccggc acgggtgaac agcagagcac cctcattgtc gtgccactcc
181 acgggcagtc cccactgtg acgggtgaac gtgtggccac cagcatgcg acggtaggca
241 agctcccgcg gcatcgccc ctgagccgca ctcagtcctc accgctgccc cagagtcccc
301 aggccctgca gcagctggc atgcaacaac agcaccagca gttcctggag aagcagaagc
361 agcagcagct acagctggc aagatccta ccaagacagg ggagctgccc aggccggcca
421 ccacccaccc tgaggagaca gaggaggagc tgacggagca gcaggaggcc ttgtctgggg
481 agggagccct gaccatccc cgggagggct ccacagagtg tgagagcac caggaagacc
541 tggaggagga ggacggagaa gaggatgggg aggaggagga gattgtcattt ggaggagcc ggtgtggat
601 acgaggaggg cgagatgtt gctgaggagg gccccgactt ggaggagcc ggtgtggat
661 aaaaaaaaact ttctcagat gcccagccgc tgacgcctt gcagggttac caggccggcca
721 tcagctggc cactgtggc caccaggccc tggggcttac ccagtctcc cctgtctgg
781 ctggggcat gaagagcccc ccagaccagc cctgtcaagc ccttccac acagggtgtgg
841 tctacgacac gttcatgcta aagcaccatg gcatgtgcgg gaacacacac gtgcacccctg
901 agcatgtgg ccggatccag agcatctgtt cccgggtgcg gtagacaggc ctgttttagca
961 agtgcgagcg gatccggaggt cgcggaaaggca cctgtatgatgatc gatccagaca gtcacccctg
1021 aataccacac cctgtcttat gggaccaggc ccctcaaccg gcagaagacta gacagcaaga
1081 agttgctcg ccccatcgc cagaagatgt atgtctgtct gccttgggg ggcacccctg
1141 tggacagtga caccgtgtgg aatgagatgc actcctccat tgctgtgcgc atggcactgg
1201 gctgcctgct ggagctggc ttcaagggtgg ctgcaggaga gctcaagaat ggatttgc
1261 tcatccggcc ccczagacac caccggcagg aatccacagc catgggattt tgcttccat
1321 actctgttagc catcaccgc zaactccttac agcagaagtt gaaacgtggc aagggtctca
1381 tcgtggactg ggacattcac catggcaatg gcacccagca ggcgttctat aatgacccct
1441 ctgtgtctata catctcttg catgtatg acaacggaa ttctttcca ggctctgggg
1501 ctccctgaaga ggttgtggc ggaccaggcg tggggatcaa tggtaacgtg gcatggacag
1561 gaggtgtggc ccccccatt ggagacgtgg agtacccattt acgttccatc acatgggtga
1621 tgcccatgtc ccacgagtt tcacctgtt tggctctat ccggccgggg ttgtatgtcg
1681 ttgaaggaca ttgttcttctt ctggggggact actctgtcactt ccggcaggatgt ttggccact
1741 tgaccaggca gctgtatgacc ctggcagggg gcccgggtgt gctggccctc gaggggggg
1801 atgacttgc cgcctatgtt gatgttccatc aggctgtgtt ctcggctctc ctcagtgat
1861 agctgcagcc ttggatgag gcatgttgc acggaaaggcc caacatcaac gcatggggcc
1921 cgctagagaa agtcatcgat atccagatg aacactggag ctgtgtgcg aagttcgcc
1981 ctggtctggg ccgggtccctg cgagaggccc aagcaggatg ggcgggggg gcccgggg
2041 tgagcgccat ggcctgttgc tgggtgggg ccgagcaggcc cagggctggc gcaaggccgg
2101 aacacagccc caaggccggca gaggagccca tggagcaggaa gctgtccctg tgacgcccccc
2161 gccccccatcc ctctggctt caccattgtt attttgttta ttttttctat taaaaacaaaa
2221 aagtccacaca ttc (SEQ ID NO:10)

FIGURE 5B

DRAFT - DO NOT CITE

1 mtstgqdstt trqrrsrqnp qsppqdssvt sknikkgav prsipnlaev kkkgkmkklg
61 qameedlivg lqgmdlnlea ealagtglv deqlnefhcl wddsfpegpe rlhaikeqli
121 qeglldrcvs fcarfaekee lmlvhslleyi dlmettqymn egelrvladt ydsvylhpns
181 yscaclasgs vrlrvdavlg aeirngmai rppghhaqhs lmdgycmfnh vavaaryaqq
241 khrirrvliv dwdvhgqgt qftfdqdpsv lyfsihryeq grfwphlkas nwsitgfgqg
301 qgytinvpwn qvgmrdadyi aaflhvllpv alefqpqqlvl vaagfdalqg dpkgemaatp
361 agfaqlthll mglaggklil sleggynlra laegvsaslh tllgdpcpml espgapcrsa
421 qasvscalea lepfwevlvr stetverdnm eednveesee egpweppvlp iltwpvlqsr
481 tglvydqnm nhcnlwdshh pevpqrilri mcrleelglia grcltlprp ateaelitch
541 saeyvghlra tekmktrelh ressnfdsiy icpstfacaq latgaacrlv eavlsgevln
601 gaavvrppgh haeqdaacgf cffnsvavaa rhaqtisgha lrilivdwdv hhgngtqhmf
661 eddpsvlyvs lhrydhgtff pmgdegassq igraagtgt vnvawngprm gdadylaawh
721 rlvlpaiayef npelvlvsag fdaargdplg gcqvspegya hlthllmbla sgriliileg
781 gynltsises maactrsllg dppplltlpr ppisgalasi tetiqvhrry wrslrvmkve
841 dregpssskl vtkkapqpk prlaermtr ekkvleagmg kvtsasfgee stpgqtnset
901 avvaltdqdp seaatggatl aqtiseaaig gamlgqtte eavggatpdq ttseetvgga
961 ildqttse da vggatlgqt seeavggatl aqtiseaame gatldqttse eapggteliq
1021 tplsstdhq tpptspvqgt tpqispstli gslrtlelgs esqgasesqa pgeenllgea
1081 aggqdmadsm lmqgsrgltd qaifyavtpl pwcpahlavc pipaagldvt qpcgdcgtiq
1141 enwvcclsyq vycgryningh mlqhggnsgh plvlsyidls awcyyqcayv hhqalldvkn
1201 iahqnkfged mphph (SEQ ID NO:11)

FIGURE 6A

1 gggcagtccc ctgaggagcg ggcgtggttg aaacgctagg ggcgggatct ggcggagtgg
 61 aagaaccgcg gcaggggcca agcctcctca actatgacct caaccggcca ggattccacc
 121 acaaccaggc agcgaagaag taggcagaac ccccagtcgc ccctcagga ctccagtgtc
 181 acttcgaagc gaaatattaa aaagggagcc gtccccgtctatcccaa tctagcggag
 241 gtaaagaaga aaggcaaaat gaagaagctc ggcctaagcaa tggaagaaga cctaatcgtg
 301 ggactgcaag ggttggatctt gaaccttggatctt gctgaagcac tggctggcac tggcttggtg
 361 ttggatgagc agttaaatga attccattgc ctctggatg acagctccc ggaaggccct
 421 gagcggctcc atgcccataa ggagcaactg atccaggagg gcctcctaga tcgctgcgtg
 481 tccttcagg cccgggttgc tgaaaaggaa gagctgtatgt tggttacacag cctagaatat
 541 attgtatcta tgaaaacaac ccagtacatg aatgaggagg aactccgtgt cctagcagac
 601 acctacgact cagtttatct gcatccgaac tcatactctt gtgcctgcctt ggcctcaggc
 661 tctgtcctca ggctgggttggatctt gggctgaga tccggatgg catggccatc
 721 attaggcctc ctggacatca cggccagcac agtcttatgg atggctattt catgttcaac
 781 cacgtggctg tggcagcccg ctatgtcaa cagaaacacc gcatccggag ggtccttatac
 841 gtagattggg atgtgcacca cggtaagga acacagttca cttcgacca ggaccccaatg
 901 gtcctctatt tctccatcca ccgtacgag cagggttaggt tctggcccca cctgaaggcc
 961 tctaactgtt ccaccacagg ttccggccaa ggcctaggat ataccatcaa tttgccttgg
 1021 aaccagggtgg ggttgcgggatctt tgctgactac attgtcttgc tccgtcacgt cctgtgc
 1081 gtcgcctcg agtccagcc tcagctggtc ctgggtggatctt tggatttgc tggccctgca
 1141 ggggacccca agggfagat ggccgcact ccggcagggt tcgcccagct aaccacactg
 1201 ctcatgggtt tggcaggagg caagctgtt ctgtcttgg agggtggctt caacccctcgc
 1261 gcccggctg aaggcgtagt tgcttcgttcc cacacccttc tggagaccc ttggcccatg
 1321 ctggagtcac ctgggtcccc ctggcggagt gcccggctt cttttccctg tgctctggaa
 1381 gcccgttgc ccttctgggatctt ggttcttggt agatcaactg agaccgtggag gggacaac
 1441 atggaggagg acaatgttgc gtagagcgag gaggaaggac cttggagcc ccctgtgc
 1501 ccaatccatca catggccact gctacatgtt cgccacaggc tggctatca cccaaatatg
 1561 atgaatcaact gcaactgttgc ggacagccac caccctgggg tacccttgcg catcttgcgg
 1621 atcatgtgcc gtcgtggatctt gtcggccctt gcccggctt gcctcacccctt gacaccgc
 1681 cctgccccccaggctt gtcacccatgtt cacagtgttgc agtacgtggg tcatctccgg
 1741 gcccggatggatctt cccggggatctt caccgttgc gtttccatgtt tgactccatc
 1801 tatatctgcc ccagtaccctt cggctgttgc cagcttgcctt ctggcgttgc ctggccctt
 1861 gtggaggctt tgcttcagg agaggatctt aatgggtgtt ctgtgggtgg tccccccatg
 1921 caccacgcag agcaggatgc agcttgcgtt ttttgcctt tcaactctgtt ggctgtggct
 1981 gtcggccatg cccagactat ctttttttttgc gtttccatgtt tgactccatc
 2041 gtccaccac gtaatggaaac tcagcacatg ttttggatgtt accccatgtt gtcataatgt
 2101 tccctgcacc gctatgttca tggcacccctt ttcccccatttgg gggatggatctt tgccagc
 2161 cagatccggcc gggctggggatctt cacaggcttc accgtcaacg tggcatggaa cggggccccc
 2221 atgggtgttgc ctgttgcactt agcttgcgtt ctgttgcgtt tgcttccatgtt tgccatcg
 2281 ttttttttttgc aactgggtgttgc ggttgcgtt ggttgcgtt ctgttgcgtt ggttgcgtt
 2341 gggggcttgc gggggatctt gggggatctt gcccacccatg cccaccatgtt gatggggcc
 2401 gcccggccatg cccatgttgc ttttttttttgc gggggatctt gggggatctt gatggggcc
 2461 tccatgggttgc cctgttgcactt gggggatctt gggggatctt gggggatctt gatggggcc
 2521 cggccccccac tatcaggggatctt gggggatctt gggggatctt gggggatctt gatggggcc
 2581 tactggcgca gtttacgggtt catgaaggta gaagacagag aaggacccatgttcaag

Figure 6B (Sheet 1 of 2)

2641 ttggtcacca agaaggcacc ccaaccagcc aaaccttaggt tagctgagcg gatgaccaca
2701 cgagaaaaaga aggttctgga agcaggcatg gggaaagtca cctccgcac atttggggaa
2761 gagttccactc cagggccagac taactcagag acagctgtgg tggccctcac tcaggaccag
2821 ccctcagagg cagccacagg gggagccact ctggcccaga ccattctga ggccagccatt
2881 gggggagcca tgctgggcca gaccacctca gaggaggctg tcgggggagc cactccggac
2941 cagaccaccc ttagggagac tgtggggaga gccattctgg accagaccac ctcagaggat
3001 gctgttgggg gagccacgct gggccagact acctcagagg aggctgttagg aggagctaca
3061 ctggcccaga ccatctcgga ggcagccatg gagggagcca cactggacca gactacgtca
3121 gaggaggctc cagggggcac cgagctgatc caaactcctc tagctcgag cacagaccac
3181 cagacccccca caacctcacc tgtgcaggga actacacccc agatatctcc cagtacactg
3241 attgggagtc tcaggacctt ggagcttaggc agcgaatctc agggggcctc agaatctcag
3301 gccccaggag aggagaacct actaggagag gcagctggag gtcaaggacat ggctgattcg
3361 atgctgatgc agggatctag gggccctact gatcaggcca tattttatgc tgtgacacca
3421 ctgccccttgtt gttccctt ggtggcagta tgccccatac ctgcagcagg cctagacgtg
3481 acccaacccctt gtggggactg tggaaacaatc caagagaatt gggtgtgtct ctcttgctat
3541 caggtctact gtggtcgtta catcaatggc cacatgtcc aacaccatgg aaattctgga
3601 cacccgctgg tcctcagcta catcgaccctg tcagccttgtt gttactactg tcaggcctat
3661 gtccaccacc aggtctcctt agatgtgaag aacatcgccc accagaacaa gtttggggag
3721 gatatcccccc acccacacta agccccagaa tacggccctt cttcaccttc tgaggccac
3781 gatagaccag ctgtagctca ttccagcctg taccttgtt gaggggttagc ctcccaactgc
3841 atccccatcctt gaatatccctt tgcaactcccc caagagtgtt tatttaagtgt ttaataacttt
3901 taagagaact ggcacgatta attgtggatc tccccctgcc cattgcgtgc ttggggggca
3961 ccactactcc agcccagaag gaaaggggggg cagctcgtg gcccacagag ggagctgata
4021 tcatgaggat aacattggcg ggagggggagt taactggcag gcatggcaag gttgcatatg
4081 taataaagta caagctgtt (SEQ ID NO. 12)

FIGURE 6B
(Sheet 2 of 2)

1 mdlrvgqrpp vepppeptll alqrpqrlhh hlflaglqqq rsvepmrlsm dtpmpelqvg
61 pqeqlrqlh hdkkskrsav assvvkqkla evilkqqaa lertvhpnsp gipyrtlepl
121 etegatrsml ssflppvpsl psdppehfpl rktvsepnlk lrypkksle rrknpllrke
181 sappslrrrp aetlgdssps ssstpasgcs spndsehgpn pilgdsdrt hptlgprgpi
241 lgsphtplfl phglepeagg tlpsrlqpil lltdpsgshap lltvpglgl pfhfaqslmt
301 terlsgsglh wplsrtsep lppsatapp pgpmqprleq lkthvqvikr sakpsekprl
361 rqipsaedle tdgggpgqvv ddglehrelg hgqpearqpa plqqhpqvll weqqrlagrl
421 prgstgdvtl lplaqqghrp lsraqsspaa paslsapepa sqarvlssse tpartlpftt
481 gliydsmlk hqcscgdnsl hpehagriqs iwsrlqergl rsqceclgrr kasleelqsv
541 hserhvlyg tnplsrlikld ngklagllaq rmfemlpcgg vgvdtitiwn elhssnaarw
601 aagsvtdlaf kvasrelkng favvrppghh adhstamgfc ffnsvaiacr qlqqskask
661 askilivdwd vhvgngtqqt fyqdpsvlyi slhrhddgnf fpgsgavdev gagsgegfnv
721 nvawagglp pmgdpeylaa frivvmpiar efspdvlvs agfdaaeghp aplggyhvs
781 kcfgymtqql mnlaggavvl alegghdlta icdaseacva allgnrvdpl seegwkqkpq
841 pqchplsggr dpgaq (SEQ ID No: 13)

FIGURE 7A

SEQUENCE NUMBER

0
1
2
3
4
5
6
7
8
9

1 ataataccta ccttgcagga ccacgacagg attaagttag gaaaaacccc catgagatg
61 ttttgcatt gtcaagttag cctgagggag gctgaggggg gatcaggctg tatcatgccc
121 ccgaggacaa actttccagt ttaccctgct ccctctct ct gccccttaggc tgccccaggc
181 cctgtgcaga cacaccaggc ctcagccgc agcccatgga cctgccccgt gcccagccgc
241 ccccaactgga gcccccacca gagcccacat tgctggccct gcagcgccc cagccctgc
301 accaccacct cttcttagca ggcctgcagc agcagcgctc ggtggagccc atgaggctct
361 ccatggacac gccgatgccc gagttgcagg tgggaccca ggaacaagag ctgcggcagc
421 ttctccacaa ggacaagagc aagcgaatgt ctgttagccag cagcgtggc aagcagaagc
481 tagcggaggt gattctgaaa aaacagcagg cggccctaga aagaacagtc catccaaaca
541 gccccggcat tccctacaga accctggagc ccctggagac ggaaggagcc acccgctcca
601 tgctcagcag cttttgcct cctgtccca gcctgcccag tgaccccca ggcacttcc
661 ctctgcgcaa gacagtctct gagcccaacc tgaagctgcg ctataagccc aagaagtccc
721 tggagcggag gaagaatcca ctgctccgaa aggagatgc gccccccagc ctccggcggc
781 gccccggaga gaccctcgga gactctccc caagtagtag cagcacgccc gcatcagggt
841 gcagctcccc caatgacagc gggcacggcc ccaatccat cctggcgac agtggccca
901 ggacccatcc gactctggc cctcggggc caatcctggg gagcccccac actccctct
961 tcctgccccca tggcttggag cccgaggctg ggggcacccctt gcccctctgc ctgcagccca
1021 ttctcctct ggacccctca ggctctcatg ccccgctgtc gactgtgcc gggcttggc
1081 ccttgccctt ccacttgcc cagtccttaa tgaccaccga gggctctct gggtcaggcc
1141 tccactggcc actgagccgg actgcgtcag agccctgc ccccaatgtcc accgcctcccc
1201 caccgccccggg ccccatgcag ccccgctgg agcagctcaa aactcacgtc caggtgatca
1261 agaggtcagc caagccgagt gagaagcccc ggctggcga gataccctcg gctgaagacc
1321 tggagacaga tgggggggca cccggccagg tgggtggacga tggctggag cacagggagc
1381 tggccatgg gcagcctgag gccagaggcc cccgcctct ccagcagcac cctcagggt
1441 tgctctggga acagcagcga ctggctggc ggctccccgg gggcagcacc ggggacactg
1501 tgctgctcc tctggccca ggtggccacc ggcctctgc cccggctcag tctcccccag
1561 cccgacactgc ctactgtca gccccagagc ctgcccagcca gggccgagtc ctctccagct
1621 cagagacccc tggcaggacc ctggccctca ccacagggtc gatctatgac tcggcatgc
1681 tgaagcacca gtgcctcgc ggtgacaaca gcaggcaccc ggagcacgccc gggccatcc
1741 agagcatctg tcccgccgtc caggagccgg ggctccggag ccagtgttag tgctcccgag
1801 gcccggagc ctccctggaa gagctgcagt cggccactc tgagcggcac gtgctccct
1861 acggcaccaa cccgctcagc cgcctaaac tggacaacgg gaagctggca gggctccctgg
1921 cacagccggat gtttggatg ctggccctgtg gtggggttgg gggtggacact gacaccatct
1981 ggaatggatc tcattccctt aatgcagccc gctggccgc tggcagtgtc actgacactg
2041 ccttcaaagt ggctctgtc gagctaaaga atggttcgc tgggtggc gggccaggac
2101 accatgcaga tcattcaaca gccatggct tctgcctt caactcagtg gccatgcct
2161 gcccggagct gcaacagcag agcaaggcca gcaaggccag caagatcctc attgttagact
2221 gggacgtcga ccatggcaac ggcacccagc aaaccttcta ccaagacccc agtgtgtct
2281 acatctccct gcatgcctt gacgacggca acttcttccc ggggagttgg gctgtggatg
2341 aggttaggggc tggcagcggc gagggttca atgtcaatgt ggcctgggtt ggagggttgg
2401 accccccccat gggggatctt ggttacctgg ctgccttcag gatagtcgtg atgcccatt
2461 cccgagagtt ctctccagac ctgttgcgg ttttgcgtt atttgtatgt gctgagggt
2521 accccggcccc actgggtggc taccatgttt ctggccaaatgt tttggatc atgacgcagc
2581 aactgttgcgaa cctggcagga ggcgcgtgg tgctggccctt ggagggtggc catgacccatca

Figure 7A (sheet 1/2)

2641 cagccatctg tgacgcctct gaggcctgtg tggctgctct tctggtaac agggtgatc
2701 cccttcaga agaaggctgg aaacagaaac cccaacctca atgcacatccg ctctctggag
2761 gccgtatcc gggcacatcg taaatactgg ggctgcatgc agccctggc ctccctgtcca
2821 gactcctggg tgccttagagt gccaggggct gacaaagaag aagtggaggc agtgaccgca
2881 ctggcgcccc tctctgtggg catcctggct gaagataggc cctcgagca gctgggtggag
2941 gagaaagaac ctatgaatct ctaaggctct ggaaccatct gcccggccac catgcccctt
3001 ggacctgggtt ctctctaacc cccctggcaat agccccccatt cctgggttt tagagatct
3061 gtgggcaagt agttggacc agagaacagc ctgcctgttt tgacagttat cccagggagc
3121 gtgagaaaat c (SEQ ID No: 14)

FIGURE 7B
(sheet 2/2)

1 meepeepads gqslvpvyiy speyvsmcds lakiplkrasm vhslieayal hkqmrvkpk
61 vasmeematf htdaylqhliq kvsqegdddh pdsieyglgy dcpategifd yaaaaggati
121 taaqclidgm ckvainwsgg whhakkdeas gfcylndavl gilrlrrkfe rilyvdldlh
181 hgdgvedafs ftskvmtvsl hkfspgffpg tgdvsdvglg kgryysvnvp iqdgijqdeky
241 yqicesvlke vyqafnpkav vlqlgadtia gdpmcsfnmt pvgigkclky ilqwqlatli
301 lgggynlan tarcwtyltg vilgktlsse ipdhefftay gpdyvleitp scrpdrneph
361 riqqilnyik gnlkhvv (SEQ ID NO:15)

FIGURE 8A

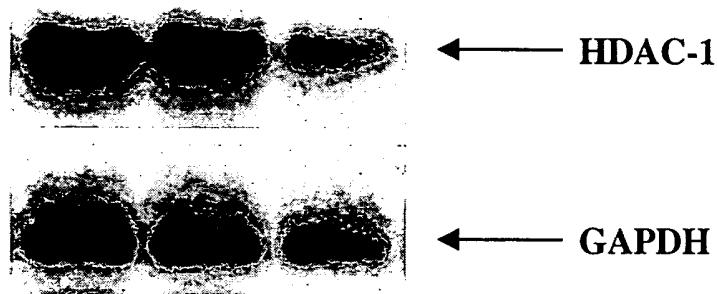
1 gaaattcggc acgagctcggtccgaattcg gcacgagaac ggtttaaaggc ggaagatgg
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121 cgagtatgc agtatgtgtg actccctggc caagatcccc aaacgggccaa gtatggcga
181 ttcttgatt gaagcatatg cactgcataa gcaaatttggg atatgttaaggc cttaaggc
241 ctccatggag gagatggcca cttccacac tgatgcitacatc tgcagcatc tccagaaggt
301 cagccaagag ggcgatgtatc atcatccggatccatagaa tatggcttagt gttatgtactg
361 cccagccact gaaggatat ttgactatgc agcagctata ggaggggctca cgatcacagc
421 tgcccaatgc ctgatgtacg gaatgtc aaatgtcaatt aactggctg gagggtggca
481 tcatgcaaaag aaagatgtcaag catctggttt ttgttatctc aatgtatgc tccctggaaat
541 attacgatttgcgacggaaat ttgagctat tctctacgtg gattttggatc tgcaccatgg
601 agatgggtta gaagacgc tcaatgttccatccaaatgc atgaccgtgt ccctgcacaa
661 attctccca ggattttcc caggaacagg tgacgtgtt gatgtggcc tagggaaagg
721 acggtaatc acgtttaatg tgcccaatca ggatggcata caagatgaaa aatattacca
781 gatctgtgaa agtgtactaa aggaagtata ccaagccttt aatcccaaaag cagtggctt
841 acagctggga gctgacacaa tagctggggatccatgtgc tcccttaaca tgactccatgt
901 gggaaatggc aagtgttta agtacatcct tcaatggcag ttggcaacac tcattttgg
961 aggaggaggc tataacccttgc ccaacacggc tcgatgtgg acataacttga ccggggcat
1021 ccttagggaaa acactatcct ctgagatccc agatcatgatggccatccatggtcc
1081 tgattatgtg ctggaaatca cgccaaatgc ccggccagac cgcaatgagc cccaccgaat
1141 ccaacaaatc tcaactaca tcaaaggaaatgc tctgaagcat gtggcttagt tgacagaaag
1201 agatcagggtt tccagagctg aggagggttgc cctataatgaa agacagcgtg tttatgcaag
1261 cagtttgtgg aatttgtgac tgcaggaaatgc aattacttcc tgaaaatttc
1321 caagggcat caagtggcag ctggcttcccttgc ggggttgc ggcaggcacc ccagagtc
1381 caactggacc tagggaaaga aggagatataccatccat taaaataaaaac
1441 cacacacaca aatgaaatttttaatcttgc aaaattttttaagcgaat tggggaggg
1501 agtattttaa tcatctttaaa tggaaacatgc cagaagctgg atgagagcag tcaccagtt
1561 gttagggcagg aggcaatgc caggcagggn tngggcctcn ggaccancca ngtggagccc
1621 tgggagagan ggtactgtc ngcagactgg gagg (SEQ ID NO:16)

FIGURE 8B

bioRxiv preprint doi: <https://doi.org/10.1101/279129>; this version posted April 12, 2018. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under a [CC-BY-ND 4.0 International license](https://creativecommons.org/licenses/by-nd/4.0/).

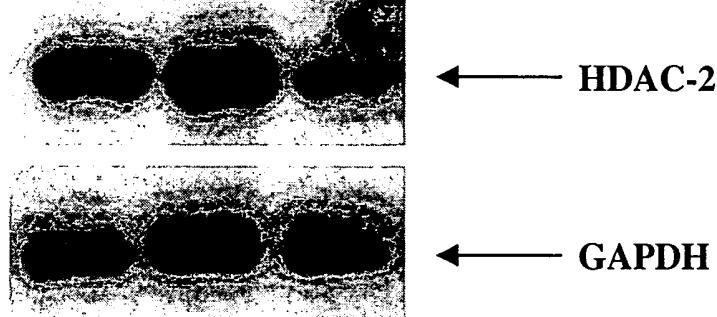
lipo MM1 AS1 100nM

Figure 9A



lipo MM AS 100nM

Figure 9B



lipo AS MM 100nM

Figure 9C

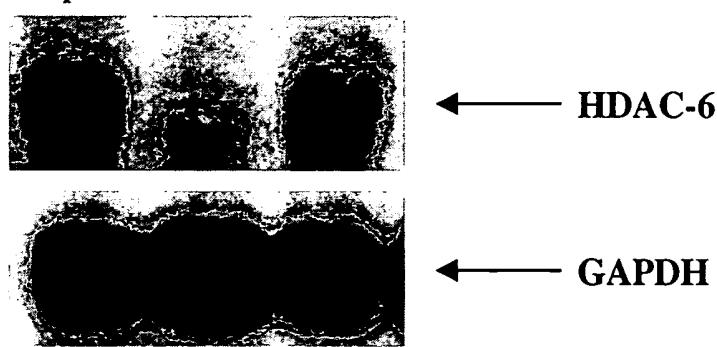


Figure 9 D

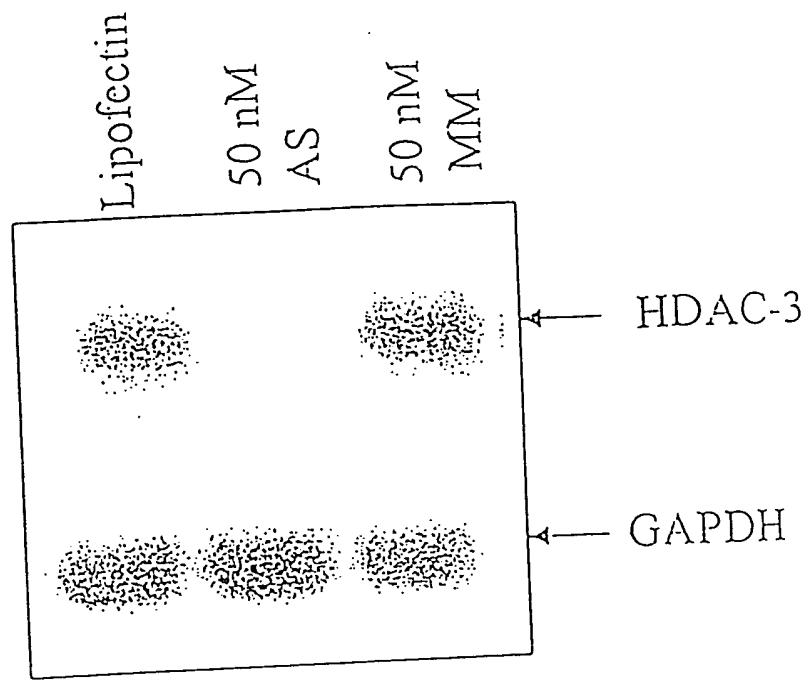


Figure 9 E

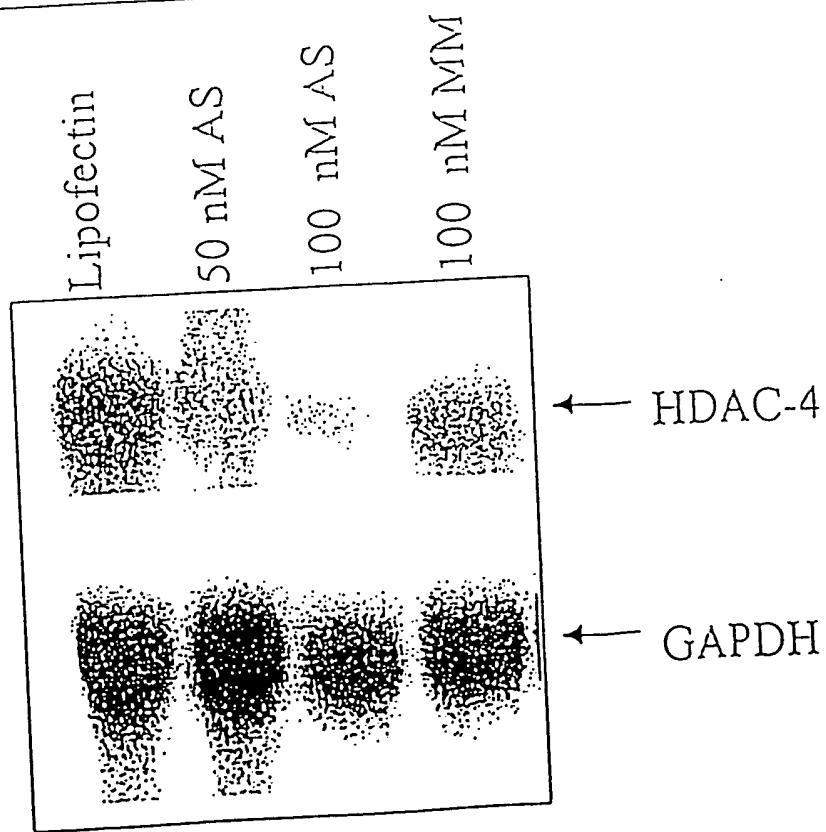


FIGURE 9 F

FIGURE 9 F

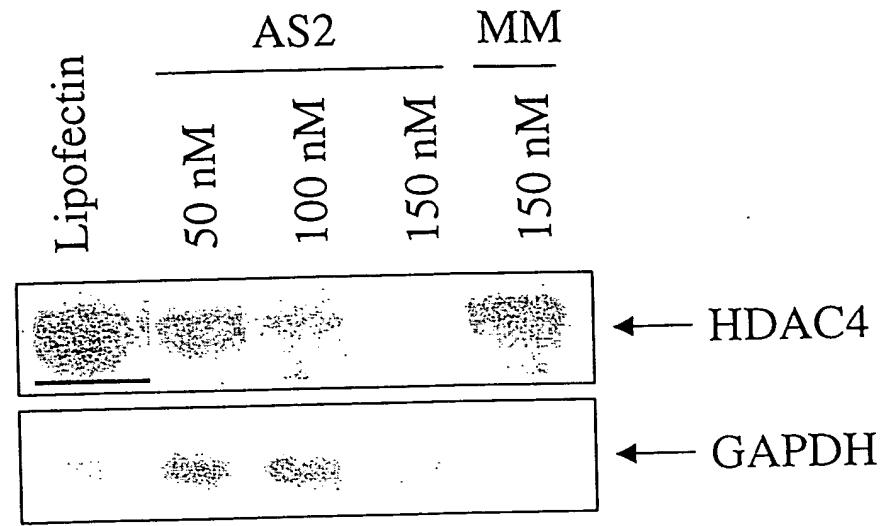


FIGURE 9 G

HDAC5

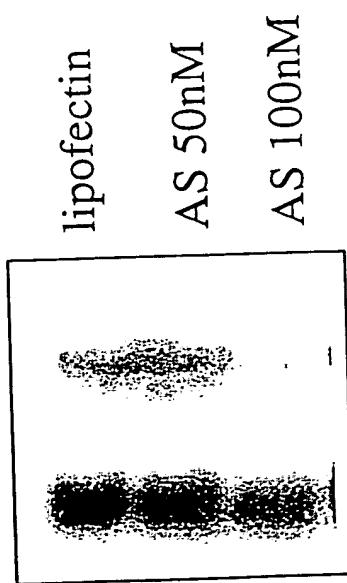


FIGURE 9 H

HDAC7

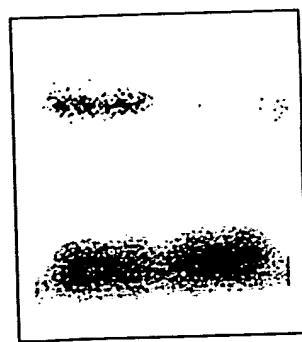


Figure 9I

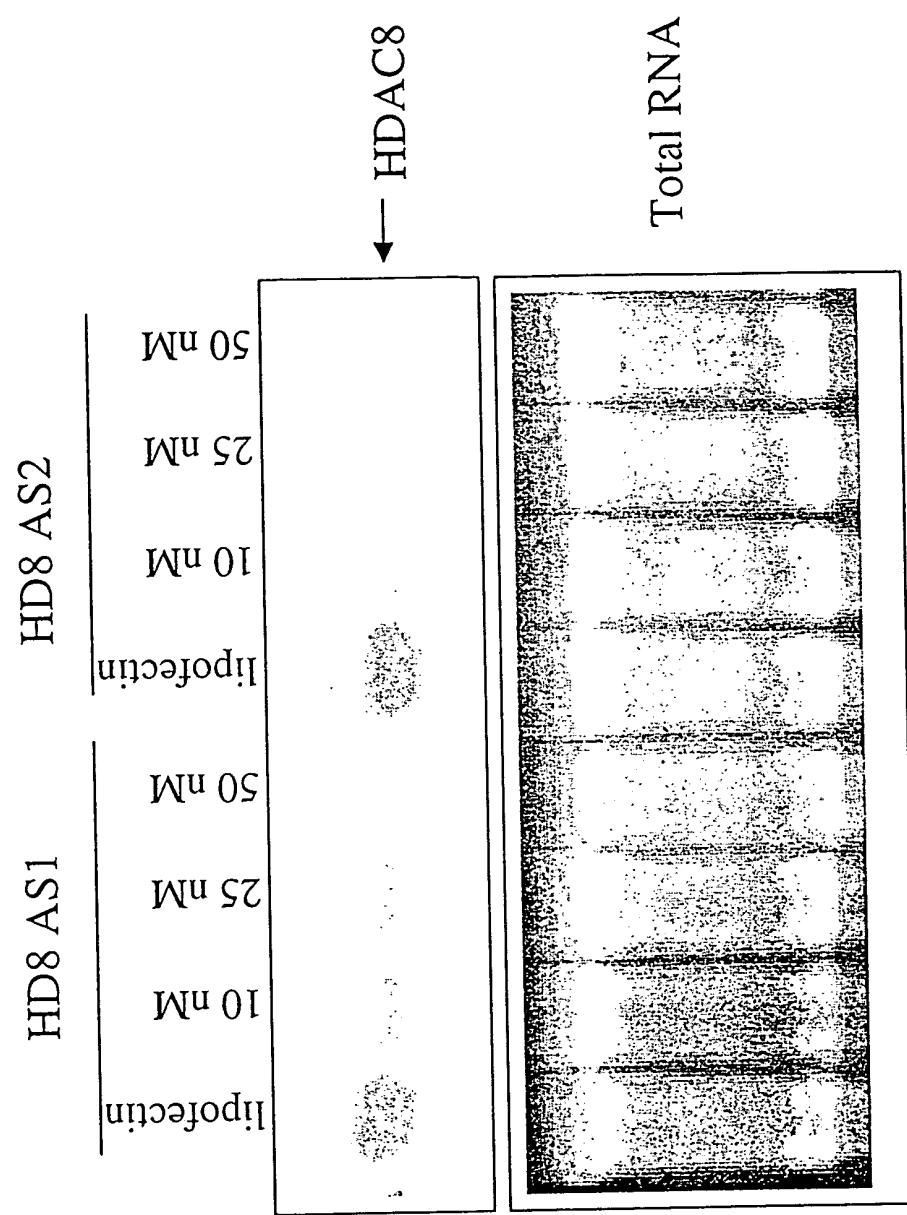
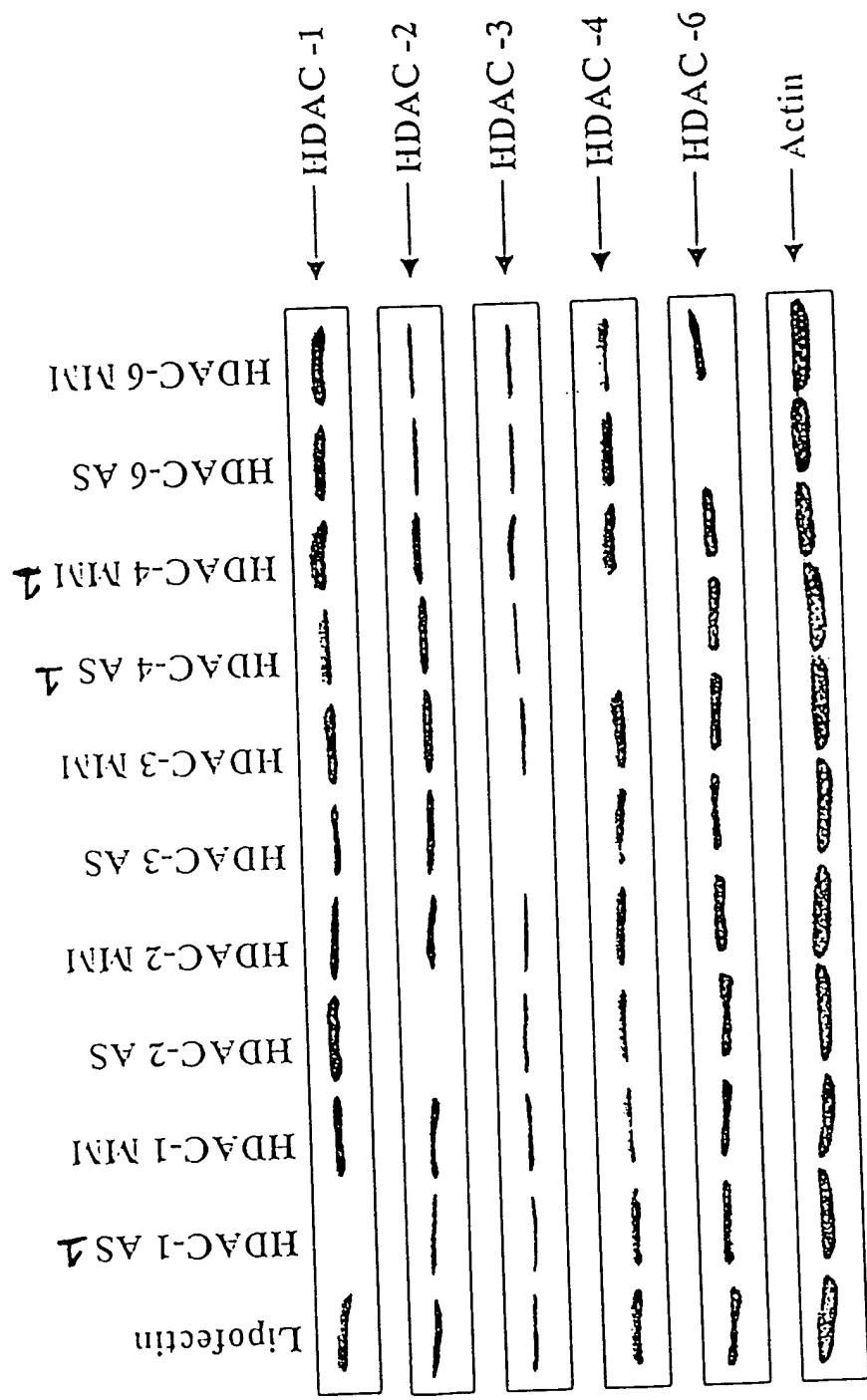


Figure 10A



AS = Antisense
 MM = Mismatch
 NS = Non-specific control
 3 day treatment
 Oligonucleotide conc. = 50nM

FIGURE 10B

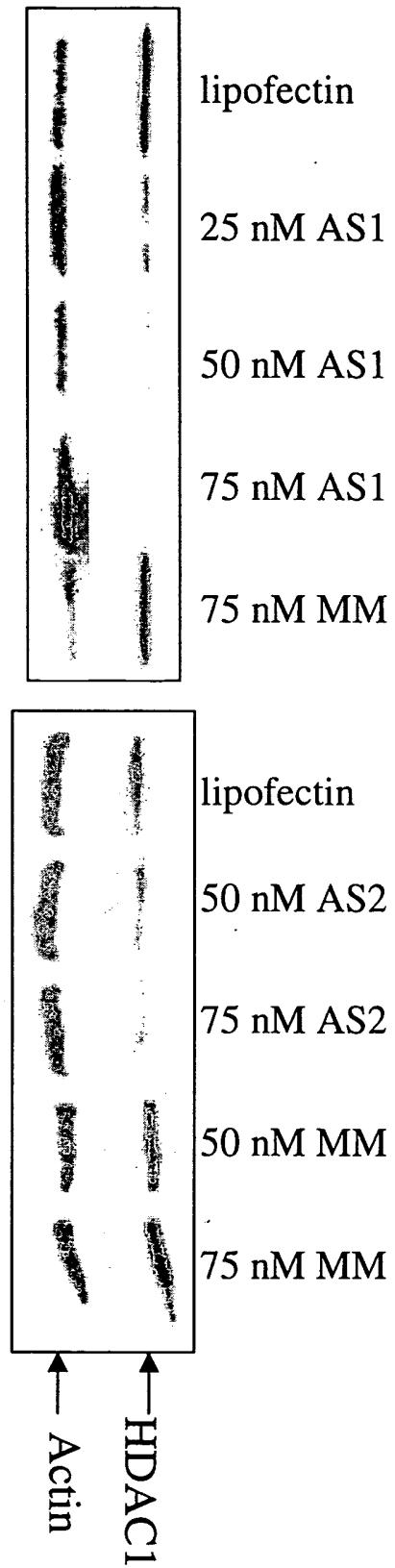
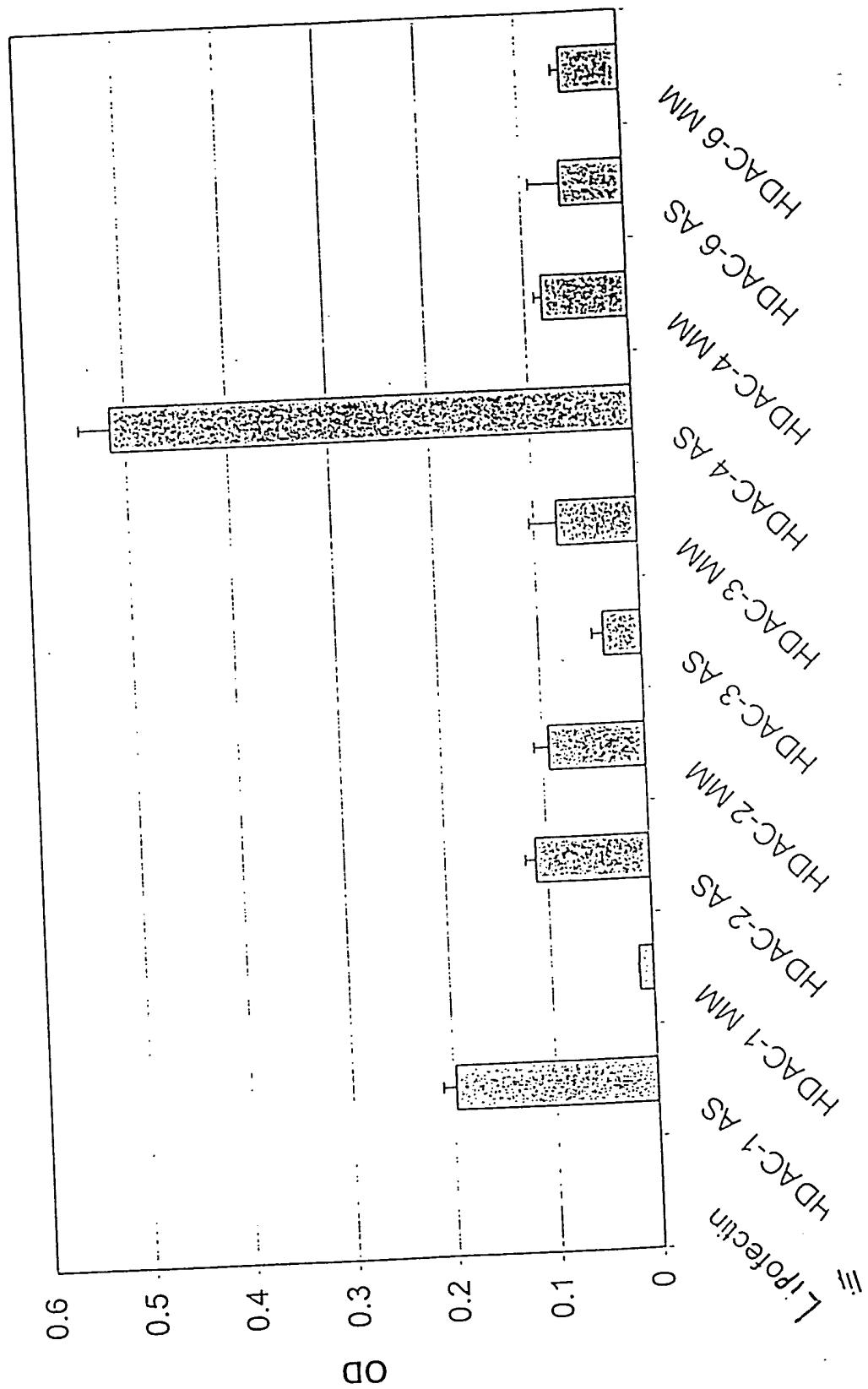


FIGURE 11



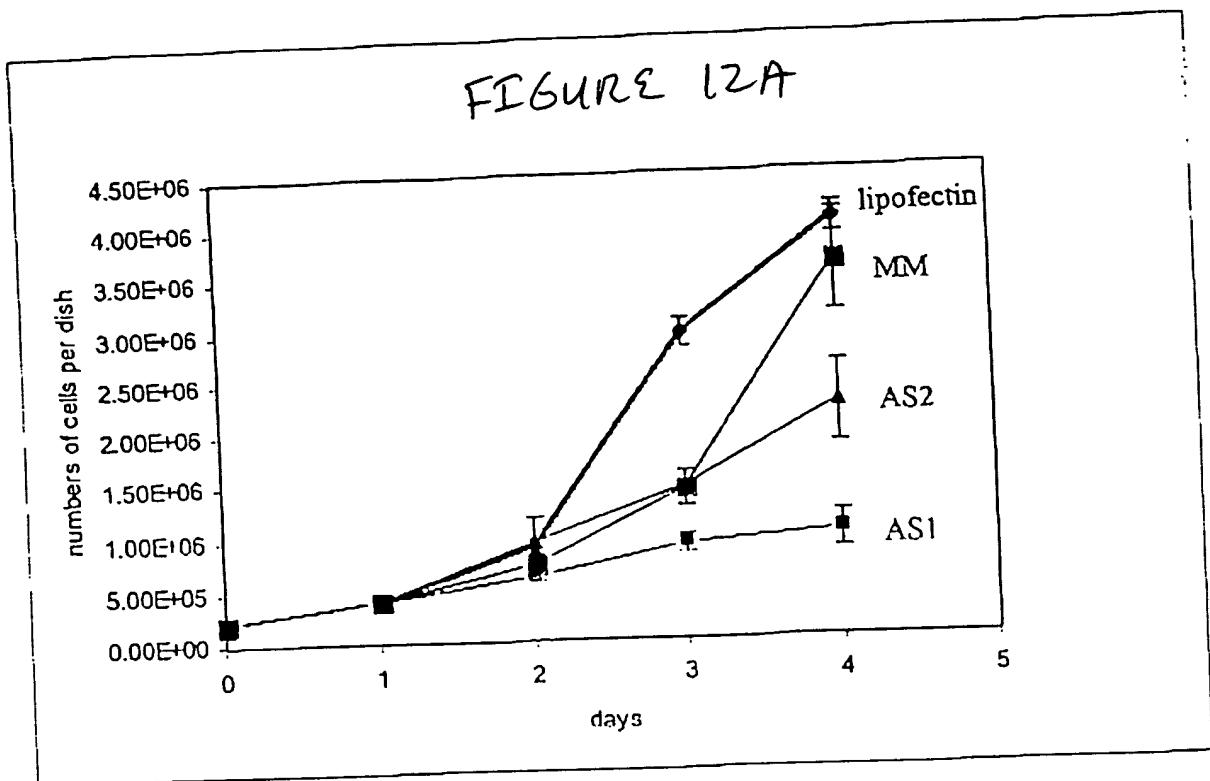


FIGURE 12B

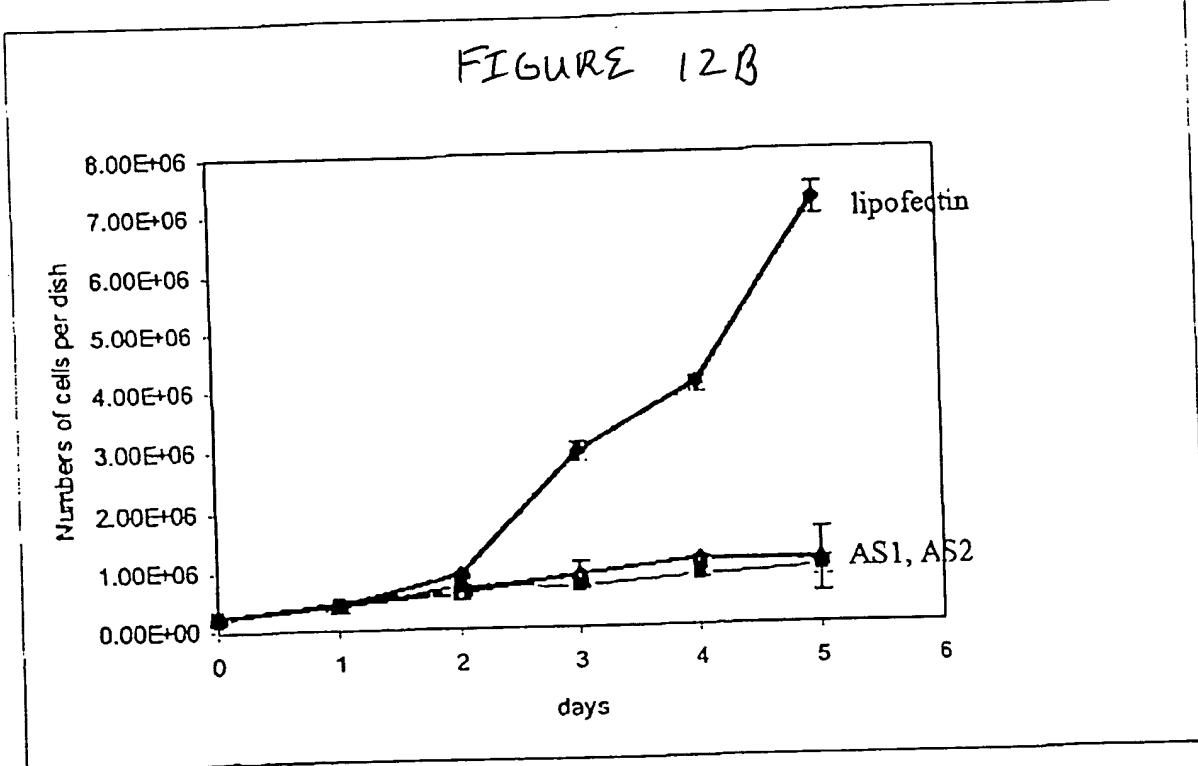
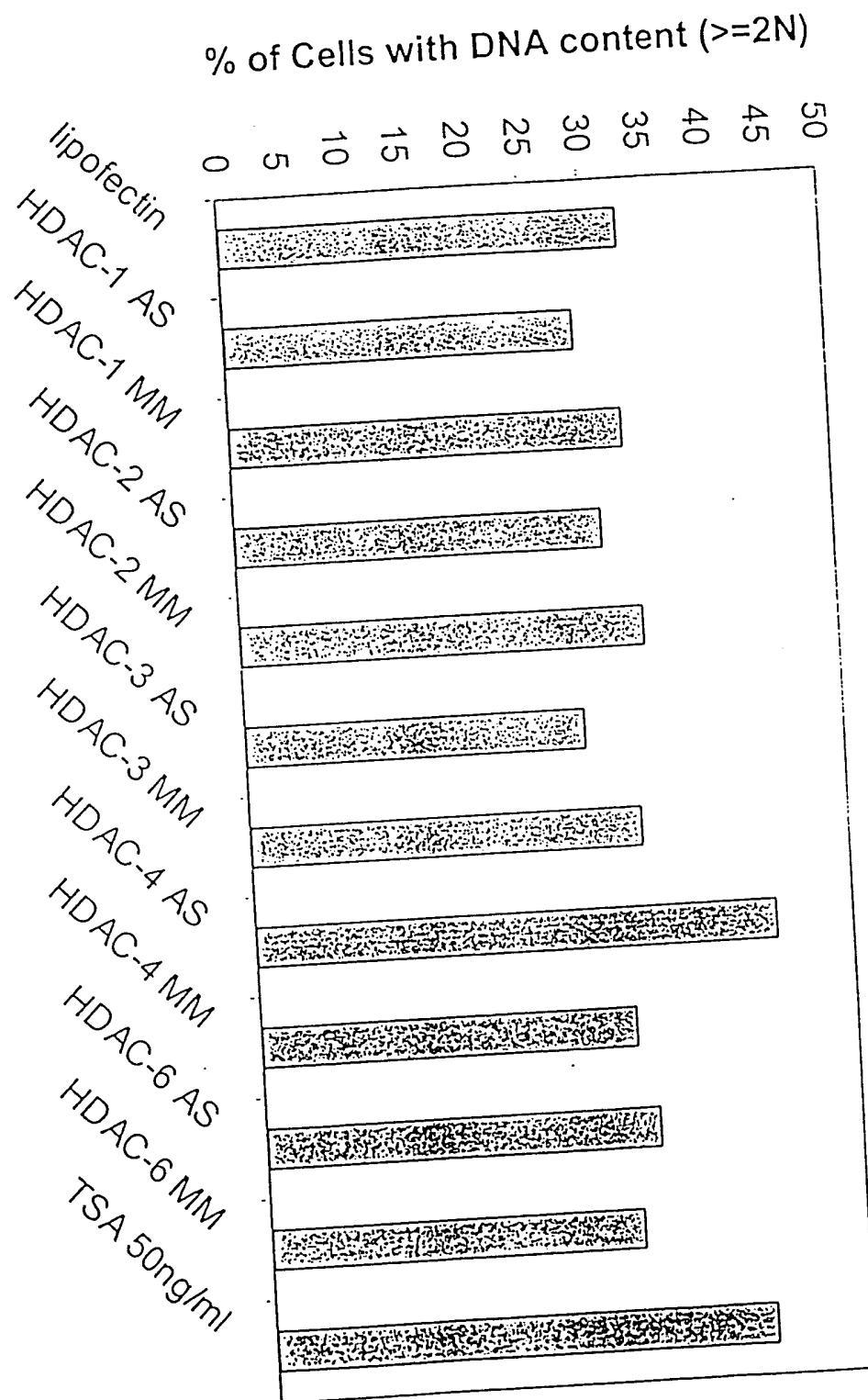


FIGURE 13



09813913 • 031601

FIGURE 14

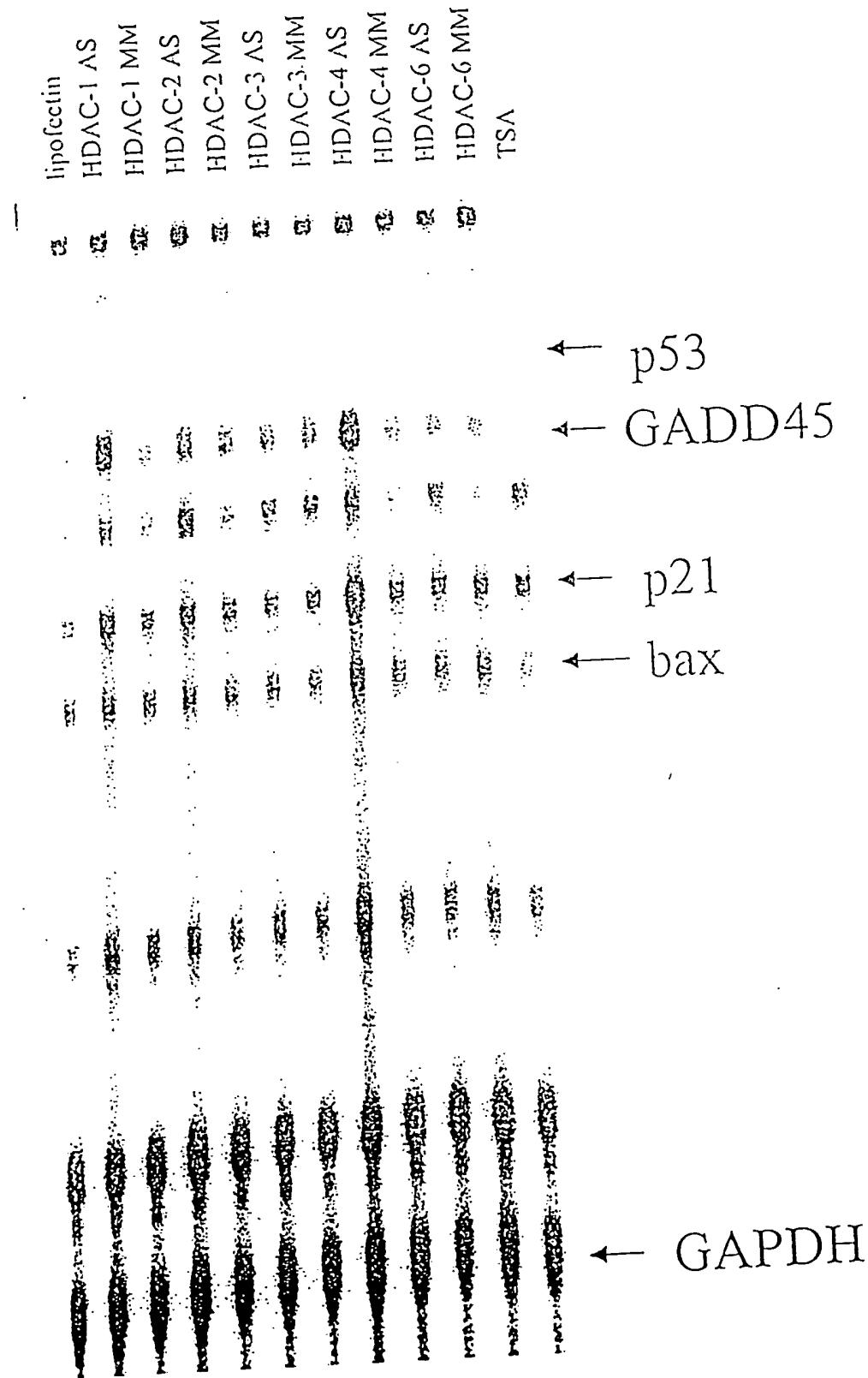


FIGURE 15

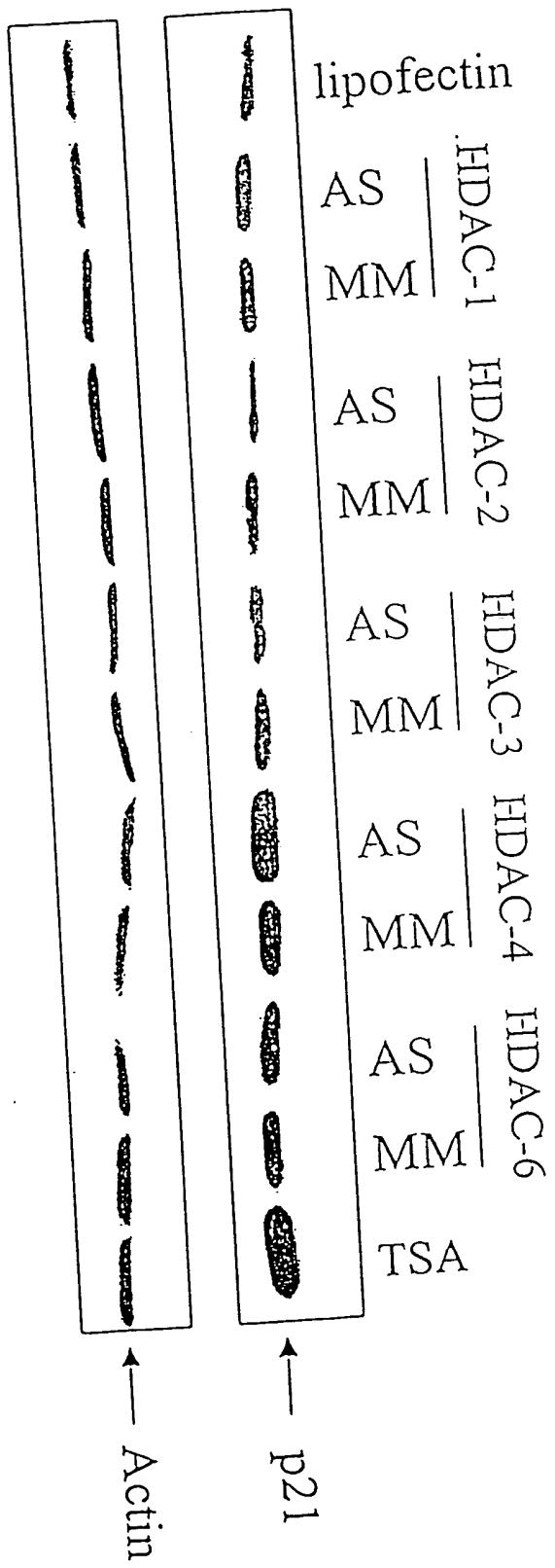


FIGURE 16

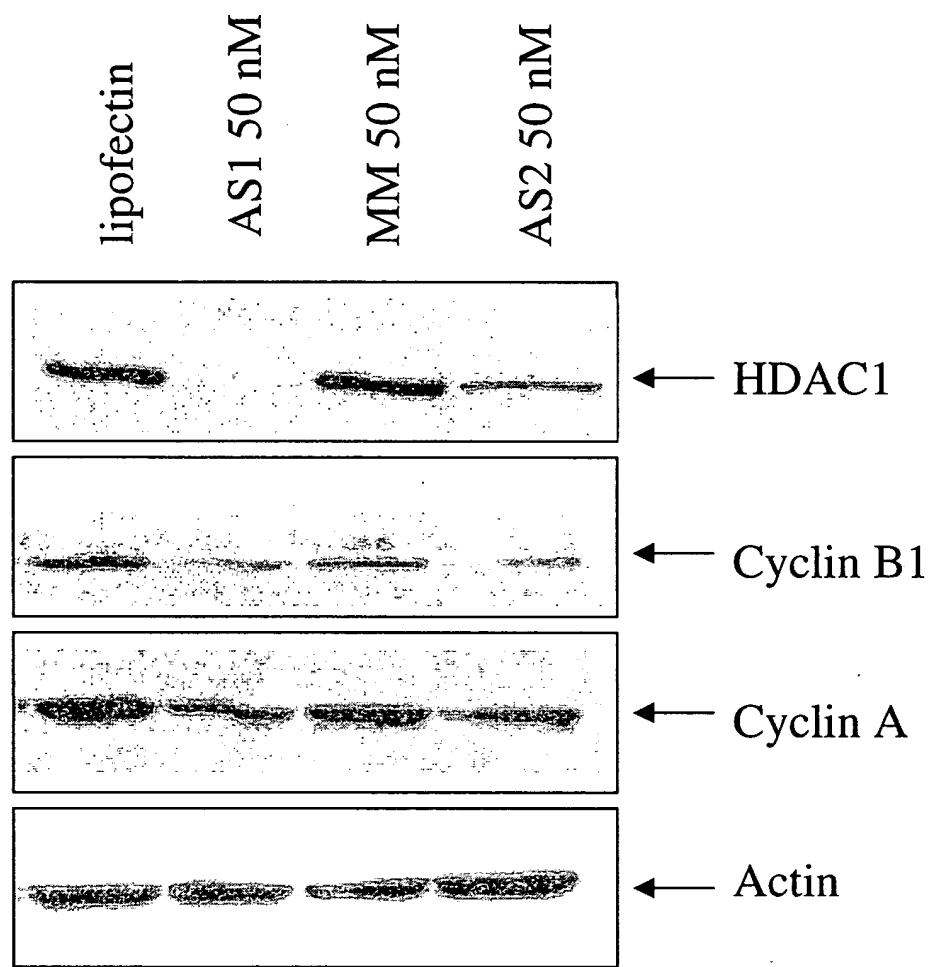


Figure 17

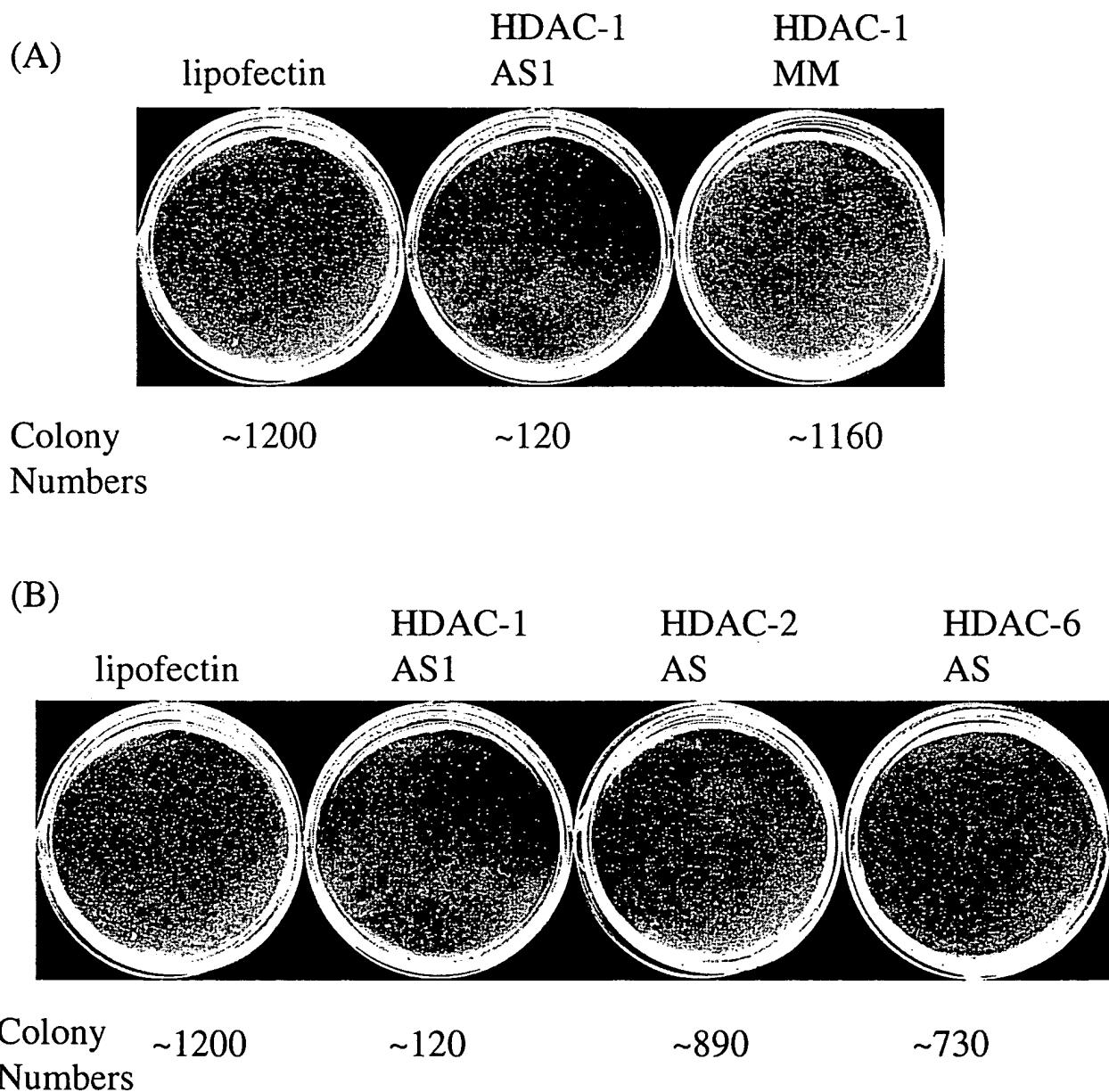
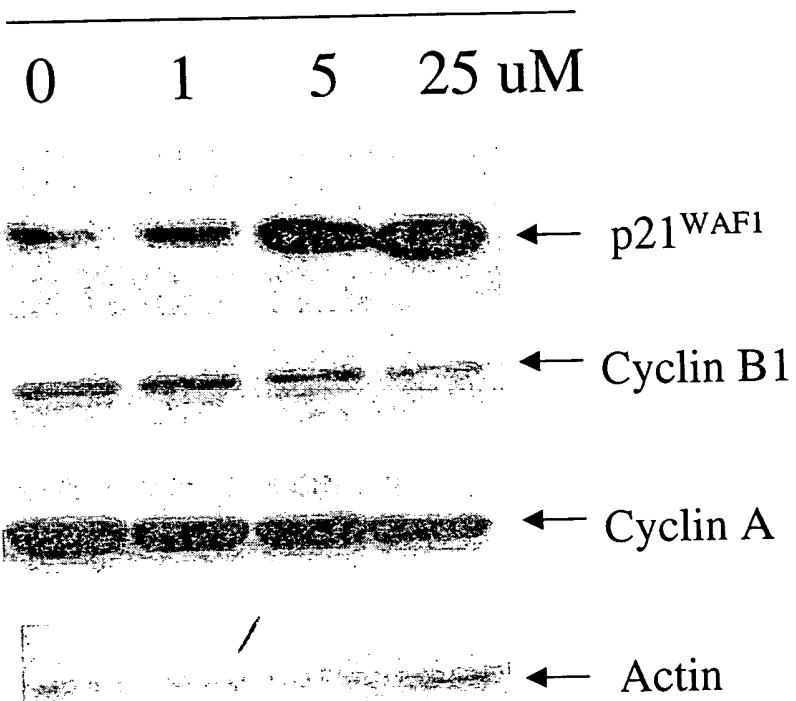


FIGURE 18

Compound 3



20276478 "DECODE"